



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,472	11/10/2000	Masato Sugimoto	10873.600US01	5701

23552 7590 11/15/2002

MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER

GONZALEZ, JULIO C

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/710,472

Applicant(s)

SUGIMOTO ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, a normal line with an edge in the longitudinal direction is disclosed. Which edge specifically is in the longitudinal direction? How can both of the longitudinal normal lines of the first and second electrodes are parallel to each other and nonparallel to another line in the longitudinal direction? It would seem like all of the lines in the longitudinal direction would be parallel to each other. What is meant by "normal" line? No structure is given as to define concisely the "normal line" and how it refers to the piezoelectric device. Which side of the piezoelectric device are the lines parallel and non parallel?

In claim 2, what is considered a "traverse direction"?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al in view of Tanaka.

Sugimoto discloses an elongated piezoelement with first and second electrodes 13 wherein thickness shear vibration (see figures 17A-17D) and also, the piezoelements are made of lithium tantalite (column 5, line 47).

However, Sugimoto does not disclose that the electrodes cover the whole width of the piezoelement.

On the other hand, Tanaka discloses for the purpose of damping undesirable vibrations, electrodes 23 and 22 that cover the whole width of a piezoelement and the use a ground electrode (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a piezoelectric element as disclosed by Sugimoto and to modify the invention by having the electrodes cover the whole width of the

piezoelement for the purpose of damping undesirable vibrations as disclosed by Tanaka.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto and Tanaka as applied to claim 1 above, and further in view of Mandai et al.

The combined piezoelectric device discloses all of the elements above. However, the combined piezoelectric device does not disclose that it may be used in mobile communications.

Although the limitations is for an intended use, Mandai et al discloses for the purpose of improving the resonant frequency and gain of an antenna that a piezoelectric device may be use in mobile communications (see abstract).

6. Claims 4-6, 10-12, 7, 8, 14 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto and Tanaka as applied to claims 3 and 9 above, and further in view of Yabe et and ordinary skill in the art.

The combined piezoelectric device discloses all of the elements above. However, the combined piezoelectric device does not disclose two piezoelectric surfaces with opposite polarizations.

On the other hand, Yabe et al discloses for the purpose of obtaining a stable angular velocity signal that two piezoelectric substrate may be placed with opposite polarities (see abstract).

Sugimoto, Tanaka and Yabe disclose the claimed invention except for the ranges of the rotating angle of the piezoelectric device and the ranges of the thickness ratio of the piezoelectric substrate.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to come with those optimum ranges that the applicant discloses, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In *re Aller*, 105 USPQ 233.

7. In regards to claims 8 and 14, the method of making the device is not germane to the issue of patentability of the device itself. Therefore this limitation has not been given patentable weight and will not be considered.

### ***Response to Arguments***

8. Applicant's arguments filed 09/10/02 have been fully considered but they are not persuasive.

Claim 1 discloses a "first and second exciting electrodes formed on a part of at least one principal plane". From the claim it would seem like if the electrodes were placed on the same surface of the piezoelectric substrate. Also, no structure as far as defining the "normal line of an edge" of the electrode is disclosed.

Respectfully, there may be other "normal line of an edge" that the electrodes may have. If a normal line is to be drawn over the electrodes, there may be arrangements to make a normal line non parallel to a side wall of the piezoelectric device since no structure of the normal line was given in the claim or a description of *which* side wall of the piezoelectric substrate is to have a normal line non parallel since the piezoelectric substrate has more than one side wall, thus the claims may be read on the prior art, Sugimoto et al.

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., normal line of an edge, direction "A" or direction "B" nonparallel to a side wall 11c or 11d) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371.

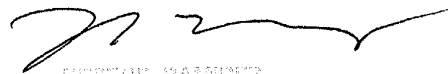


Application/Control Number: 09/710,472  
Art Unit: 2834

Page 8

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



KESTON PALMER  
SUPERVISOR OF NEW EXAMINER  
TECHNICAL CENTER 2800

Jcg

November 12, 2002